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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/042,681 03/12/98 ISHIDA

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EXAMINER
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CREPEAU, J	
ART UNIT:	PAPER NUMBER

1745

DATE MAILED:

06/16/99

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.  
09/042,681

Applicant(s)  
Ishida et al

Examiner  
Jonathan Crepeau

Group Art Unit  
1745



☒ Responsive to communication(s) filed on Mar 12, 1998

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claims

☒ Claim(s) 1-15 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 1-15 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☒ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been

☒ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 4, 5

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The European Search Report, listed in "Other Documents" section of the IDS, has not been considered because it is an unpublished document. All of the references listed thereon, however, have been considered.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

- ✓ 3. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The word "type" in claim 2 is indefinite and thus renders the claim indefinite.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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5. Claims 1-3, 5, and 7-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Peled et al (WO 94/24715). Peled et al teach a lithium polymer secondary battery comprising a positive electrode, negative electrode and polymer electrolyte on page 6, first paragraph (the polymer electrolyte may also be incorporated in the composite cathode). A ceramic made of alumina, silica or magnesia and not relating to charge and discharge is incorporated in the electrolyte and cathode, as taught on page 4, first and second full paragraphs, and page 6, last sentence of first paragraph. The ceramic is granular with a particle size of 0.05-0.5 microns (see page 4, first full paragraph).

Thus, the instant claims are anticipated.

6. Claims 1, 2, and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 7-153495. The abstract teaches a lithium polymer secondary battery comprising a positive electrode, negative electrode and polymer electrolyte (separator). A ceramic (alumina) not relating to charge and discharge is contained in the positive electrode. The alumina is present in 2 parts by weight in 87 parts by weight of active material, or a weight percentage of about 2% (which falls within the range of instant claim 4).

Thus, the instant claims are anticipated.

***Claim Rejections - 35 USC § 103***

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7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peled et al.

The general teachings of Peled et al are applied to the instant claims as explained in the rejection above. The negative electrode containing carbon and having alumina particles dispersed therein is taught in Example 22. The weight percentage of alumina in the alumina/coke mixture as 17.4% (according to the examiner's calculations using densities obtained from the Prokon software package of 3.965 and 2.1 g/cc for alumina and coke (amorphous carbon), respectively).

Peled et al do not teach a weight percentage under 16.67% (according to the maximum percentage of instant claims 13 and 15 obtained by dividing 20 by (100+20)).

However, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the weight percentage of alumina has not been shown to be a critical variable in the practice of the invention. Thus, the prior art is sufficient to render *prima facie* obvious the claimed range of parts by weight. Applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range (In re Woodruff, 16 USPQ2d 1934).

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9. Claims 6, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peled et al, in view of Kawakami (U.S. Pat. 5,888,666), or Blonsky (U.S. Pat. 5,648,011).

Peled et al is applied to claims 1 and 7 for the reasons stated in the 102 rejection above. Additionally, they teach an organic electrolyte solution dissolving lithium salt on page 4. The negative electrode is mixed with the electrolyte, as taught in Example 22. The main component of the composite electrolyte being polyethylene oxide (PEO) is taught on page 5.

Peled et al do not explicitly teach that the polymer electrolyte is a gel, or the weight fraction of electrolytic solution.

Kawakami teaches a polymer gel which may comprise PEO in the paragraph starting in column 8, line 43.

Blonsky teaches a gelled electrolyte including a gelling agent made of alumina in the abstract.

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because either of these references show that the polymer electrolyte of Peled et al could be termed a "gel". Kawakami teaches a number of polymers that are inherently gelled materials, including PEO. Therefore, the artisan may surmise that while Peled et al call their electrolyte a "composite solid electrolyte," the polymer component of the electrolyte is really a gel. Additionally, Blonsky teaches that silica, alumina, and magnesia are all used as gelling agents in an electrolyte. Therefore, the artisan may surmise that because

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alumina (a gelling agent) is used in the polymer electrolyte of Peled et al, the electrolyte must then be a gel.

Furthermore, the weight fraction of electrolytic solution has not been shown to be a critical variable in the practice of the invention. Thus, the prior art is sufficient to render *prima facie* obvious the claimed range of parts by weight. Applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range (*In re Woodruff*, 16 USPQ2d 1934).

### ***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Ishida et al, JP 9-306543.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Crepeau whose telephone number is (703) 305-0051. The examiner can normally be reached on Monday-Thursday from 9:00 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Maria Nuzzolillo, can be reached at (703) 305-3776 from Monday-Thursday. The phone number for the organization where this application or proceeding is assigned is (703) 305-5900.

Documents may be faxed to (703) 306-3429. The official fax number for documents of extreme importance (such as amendments after final) is (703) 305-3599.

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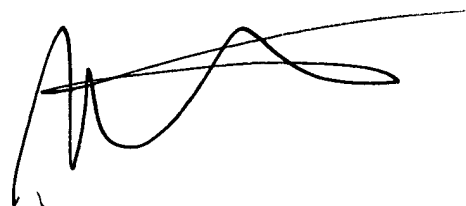
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Any inquiry of general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

JSC

June 6, 1999

**Maria Nuzzolillo**  
**Supervisory Patent Examiner**  
**Technology Center 1700**

A handwritten signature in black ink, appearing to be 'M. Nuzzolillo', with a long horizontal flourish extending to the right.